January 7, 1974
Preliminary Copy
University of Idaho

Santa Silt Loam 65 Ida 0509

General Site Characteristics

Location -- Benewah County, Idaho (057) near SE corner of SE 1/4 SW 1/4, Sec. 3, T 43 N., R. 4 W.; described -- August 18, 1965, by

; topography -- convex, 2 percent slope; elevation -- 2690 feet; parent material -- loess; drainage -- moderately well; permeability -- moderate in surface, slow in B2x; erosion -- slight; aspect -- east; ground water -- deep; root distribution -- throughout profile - root mats follow prism faces in fragipan; vegetation or use -- Douglas fir, grand fir, larch, quaking aspen, lodgepole pine; classification -- coarse - silty, mixed, frigid, Typic Fragiochrept.

Pedon Description

O1 1.5-1". Undecomposed and partially decomposed pine needles and twigs.

1-0". Nearly decomposed organic matter.

A1 0-3.5". Light brown gray (10YR 6.4/2) broken and crumb, dark brown (3.6/3) crumb, moist; weak very fine platy structure; slightly hard, very friable, slightly sticky, and slightly plastic; plentiful micro and very fine, few fine and coarse roots; many micro discontinuous tubular pores; noncalcareous; clear wavy boundary.

B 3.5-9". Light gray (10YR 6.8/2) broken and crumb, dark gray brown (10YR 4.3/2) moist; massive; slightly hard, friable, slightly sticky, and slightly plastic; plentiful micro, very fine, fine roots, few medium roots; common micro and very fine tubular pores; many Fe and Mn concretions on ped surfaces, many bleached silt grains, common medium faint mottles; noncalcareous; gradual wavy boundary.

B 9-14.5". Light gray (10YR 6.8/2) broken and crumb, dark brown (10YR 3.8/3.2) moist; massive; hard, friable, slightly sticky, and slightly plastic; plentiful micro and very fine, few fine and medium roots; many micro and very fine, few fine pores; many Fe and Mn concretions, many medium distinct mottles in lower part; noncalcareous; gradual smooth boundary.

A21 14,5-20.5". Light gray (10YR 6.8/2) broken and crumb, brown (10YR 5/3.2) moist; massive; hard, friable, slightly sticky, and slightly plastic; plentiful micro and very fine, few fine and medium roots; many micro, very fine, fine tubular pores; many Fe and Mn concretions, many medium distinct mottles in lower part; noncalcareous; clear wavy boundary.

A22 20.5-23". Light gray (10YR 7/1.4) broken and crumb, light brown gray (10YR 6.3/2) moist; massive; hard, friable, slightly sticky, and slightly plastic; few micro, very fine, and fine roots; common micro and very fine tubular pores; many concretions, many medium distinct mottles; noncalcareous; abrupt irregular boundary.

B21tx 23-33". Yellowish brown (10YR 5/4) broken, pale brown (10YR 6/3) crumb, dark yellowish brown (10YR 3.6/3.6) moist; moderate to strong medium prismatic structure; very hard, very firm, sticky, and plastic; few very fine, fine, medium, and coarse roots; few very fine, fine vesicular pores; medium continuous vertical, horizontal and pore surfaces; noncalcareous; gradual wavy boundary.

B22tx 33-51". Pale brown (10YR 6/3) broken, yellowish brown (10YR4.6/4) moist; moderate to strong medium, coarse prismatic structure; very hard, very firm, sticky, and plastic; few very fine, fine and medium roots; few very fine and fine vesicular pores; thick continuous vertical, horizontal, pore surfaces; noncalcareous; clear smooth boundary.

B23tx 51-61 inches. Pale brown (10YR 6/3) broken, yellowish brown (10YR 4.6/4) moist; moderate coarse prismatic structure; very hard, very firm, sticky, and plastic; many concretions; thin continuous vertical, horizontal, pore surfaces; noncalcareous.

Chemical characterization and physical analysis of profile

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Santa

No.	Horizon	Depth in.	pH Paste	pH 1:5	ECx10^3	Saturation extract me/1000 gms soil Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4
1	A1	0-3.5	5.65		.30								
2	B	3.5-9	5.95		.25								
3	B	9-14.5	5.95		.13								
4	A21	14.5-20.5	5.65		.10								
5	A22	20.5-23	5.45		.01								
6	B21tx	23-33	5.45		.16								
7	B22tx	33-51+	5.85		.15								
8	B23tx	51-61	5.85		.15								

Exchangeable ions me/100 gms Ca	Mg	Na	K	H	C.E.C. meq/100	Base Sat.%	Gyp.	$CaCO_3$	E.S.P.	O.M. %	N %	C:N	Soil:Rx ratio
6.7	1.1	.1	.4	7.9	13.1	51.1				1.99	.079	14.7	
6.0	1.0	.1	.3	4.8	10.0	60.3				.90	.045	11.8	
5.5	1.2	.2	.3	4.4	9.8	61.9				.70	.039	10.5	
5.3	1.2	.2	.2	4.4	8.9	61.1				.34	.025	8.0	
6.0	1.6	.2	.1	5.0	10.9	61.4				.24	.019	7.4	
12.7	4.2	.4	.2	5.7	21.9	75.5				.33	.030	6.3	
13.2	4.6	.4	.3	4.7	21.3	79.8				.29	.032	5.3	
14.4	5.5	.4	.4	5.0	24.9	80.6				.24	.027	5.2	

$$\%C = \frac{\%\ OM}{1.72}$$

Profile: 65 Ida 0509 Santa Series

Date Started 8/13/68
Date Finished 8/21/68

	Particle size distribution (mm) (percent)								Gravel &	
No.	VCS	CS	MS	FS	VFS	TS	TSi	TC	Stone, etc.	Texture
	2-1.0	1-0.5	0.5-0.25	0.25-0.05	0.1-0.05		0.05-0.002	<0.002	>2mm	Class
1) 0-3.5	.11	.50	.55	2.34	7.12	10.70	79.06	10.24	0%	Silt Loam
2) 3.5-9	.35	.54	.67	2.78	8.08	12.11	77.25	10.64		Silt Loam
3) 9-14.5	.19	.55	.61	2.48	7.45	11.28	78.61	10.11		Silt Loam
4) 14.5-20.5	.24	.44	.70	2.88	8.40	12.67	79.06	8.27		Silt Loam
5) 20.5-23	.18	.42	.49	2.55	7.00	10.63	78.34	11.02		Silt Loam
6) 23-33	.15	.22	.49	1.95	6.65	9.45	64.63	25.92		Silt Loam
7) 33-51	.31	.56	.70	2.91	8.24	12.72	58.69	28.59		Silty Clay Loam
8) 51-61	.40	.50	.73	2.71	7.63	11.97	58.07	29.96		Silty Clay Loam

Remarks: Samples ran quite smoothly. No lime.

Reference for data:
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